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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Kamlesh Rath

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EXAMINER

GONZALEZ, AMANCIO

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

07/08/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/616,882	Applicant(s) RATH, KAMLESH	
	Examiner AMANCIO GONZALEZ	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/12/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-38, filed on 04/12/2010, have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims **1- 7, 12-25, and 31-37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Majidi -Ahy (US 20070184828 A1), hereafter "Majidi," in view of Son (US 20030104781 A1), hereafter "Son," further in view of Bandeira et al. (US Pat 6728514), hereafter "Bandeira," further in view of Leung et al. (US 6400697 B1), hereafter "Leung."

Consider **claim 1**. As suggested by Majidi, not new in the art are:

a mesh access network (**see [0072]**) comprising:

at least one base station (120) (**see Abstract, [0008], fig. 1**) comprising a plurality of sectors (**see [0029], [0036]**);

each sector comprising terminal nodes each comprising an antenna (**see [0008], [0009], [0025], and fig. 1, where Majidi discusses terminal nodes described as premise equipments and access points in a wireless network, hence comprising at least one antenna**); and

plurality repeaters (**see Abstract, [0008], [0047], [0049]**).

But Majidi is silent on whether indoor terminal nodes and outdoor repeaters are known in the art.

Son, in analogous art, suggests the aforesaid limitation (**see [0013], fig. 4**).

Therefore, it is obvious that a person of ordinary skill was aware that indoor terminal nodes (160 in fig. 4) and outdoor repeaters (141 in fig. 4), in the way taught by Son, were of common knowledge in the art at the time the invention was made, and would have included it in, or applied it to, the claimed invention, or either combined it with Majidi's teachings, thereby providing means for the purpose of enabling seamless connection between home and a nearby base station or repeater for the purpose of improving cellular reception, resulting in less dropped calls and more revenue for the service providers without building costly base stations, as discussed by Son (**see Abstract**).

However, Majidi, as modified by Son, do not mention wherein said terminal nodes and repeaters in each section are arranged in a tree structure starting from said base-station

Bandeira, in analogous art, suggests the aforesaid limitation (**see col. 3 lines 35-59, col. 6 lines 27-36, col. 13 lines 63-67 and col. 14 lines 1-16, figs. 1 and 2**).

Therefore, it is obvious that a person of ordinary skill was aware that nodes arranged in a tree structure, in the way taught by Bandeira, was of common knowledge at the time the invention was made, and would have included it in, or applied it to, the claimed invention, or either combined it with Majidi's teachings as modified by Son, thereby providing means for efficiently transferring large amount of multimedia content between various remote locations and a central location, as discussed by Bandeira (**see col. 1 lines 13-28**).

Notwithstanding, Majidi, as modified by Son and Bandeira, does not mention wherein said base-station sectors use different frequency bands that are located in alternate sectors of said base-station, a module for interference management and sector reuse comprising network management of frequency, time, and directionality.

Leung, in analogous art, suggests the aforesaid limitation (**see column 2 lines 44-67 and column 5 lines 24-63**).

Therefore, it is obvious that a person of ordinary skill was aware that sectors using different frequency bands located in alternate sectors of a base station, interference management and sector reuse comprising network management of frequency, time, and directionality, in the way taught by Bandeira, was of common knowledge at the time the invention was made, and would have included it in, or applied it to, the claimed invention, or either combined it with Majidi's teachings as modified by Son and Bandeira, thereby providing means for resource allocation in a broadband

Art Unit: 2617

wireless communications system for the purpose of achieving capacity growth, among other benefits, as discussed by Leung (**see column 12 lines 12-17**).

Consider **claims 2 and 7**. Majidi, as modified by Son, Bandeira, and Leung, teaches claim 1; and Majidi further discloses base station and repeaters (see Majidi: see abstract, col. 2 lines 23-26, col. 4 lines 15-18).

Consider **claims 3, 4, 13-18, and 31-36**. Majidi, as modified by Son, Bandeira, and Leung, teaches claims 1, 2, 19, and 20; Majidi further discloses a multi-sector cell and time-slot –TDMA- system (see Majidi: col. 8 lines 51-67, col. 10 lines 31-36); and Bandeira further discloses several level of repeaters (see Bandeira: col. 9 lines 63-67 and col. 10 lines 1-4).

Consider **claims 5, 6, 23, and 24**. Majidi, as modified by Son, Bandeira, and Leung, teaches claims 1 and 19; and Leung further discloses frequency reuse (see Leung: col. 2 lines 16-20 and 44-67).

Consider **claims 12 and 30**. Majidi, as modified by Son, Bandeira, and Leung, teaches claims 1 and 19; and Bandeira further discloses tree-structured network (see Bandeira: col. 3 lines 35-59, col. 6 lines 27-36, col. 13 lines 63-67 and col. 14 lines 1-16, figs. 1 and 2).

Claim 19 claims the base station claimed in the mesh network of claim 1; therefore, the same rejection rationale applies.

Consider **claims 20-22**. Majidi, as modified by Son, Bandeira, and Leung, teaches claim 20; and Majidi further suggests at least one Base-Station Level1-repeaters link; and at least one Repeater Base-Station link; wherein said repeaters

Art Unit: 2617

distribute data packets to or from terminals in said time-slots by scheduling non-interfering links to transmit at a same time (see [0072]).

Consider **claim 25**. Majidi, as modified by Son, Bandeira, and Leung, teaches claim 20; and Majidi further suggests wherein communication with nodes in a sector that cannot communicate directly with said base-station is done through a first set of repeaters in a sector; wherein data packets from said base-station to a node are switched to said node through multiple hops; and wherein data packets from a node are transmitted through multiple hops to said base-station (see [0072]).

Consider **claim 37**. Majidi, as modified by Son, Bandeira, and Leung, teaches claim 1; and Leung further suggests wherein the at least one base station is operatively configured to utilize a minimum of 2 frequency bands (see Leung: column 2 lines 29-30).

4. **Claims 8-11 and 26-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Majidi -Ahy (US 20070184828 A1), hereafter “Majidi,” in view of Son (US 20030104781 A1), hereafter “Son,” further in view of Bandeira et al. (US Pat 6728514), hereafter “Bandeira,” further in view of Leung et al. (US 6400697 B1), hereafter “Leung,” as applied to claims 1, 7, 19, and 25, further in view of Ngan et al. (US Pat 6973312), hereafter “Ngan.”

Consider **claims 8, 9, 26, and 27**. Majidi, as modified by Son, Bandeira, and Leung, teaches claims 1, 7, 19, and 25 above respectively, but does not particularly refer to increasing capacity adding carrier.

Art Unit: 2617

Ngan discloses increasing capacity adding carrier (see col. 1, lines 1-3; col. 5, lines 47-52).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combined inventions of Majidi, as modified by Son, Bandeira, and Leung, and have it include increasing capacity adding carrier, as taught by Ngan, thereby providing a frequency plan in a wireless network for the purpose of accommodating a greater number of users in a required moment at a determined coverage area.

Consider **claims 10 and 28**. Majidi, as modified by Son, Bandeira, Leung, and Ngan, teaches claims 9 and 27 above; and Majidi further discloses base station and repeaters (see Majidi: see abstract, col. 2 lines 23-26, col. 4 lines 15-18).

Consider **claims 11 and 29**. Majidi, as modified by Son, Bandeira, Leung, and Ngan, teaches claims 9 and 27; Majidi further discloses a multi-sector cell and time-slot –TDMA- system (see Majidi: col. 8 lines 51-67, col. 10 lines 31-36); and Bandeira further discloses several level of repeaters (see Bandeira: col. 9 lines 63-67 and col. 10 lines 1-4).

5. **Claim 38** is rejected under 35 U.S.C. 103(a) as being unpatentable over Majidi - Ahy (US 20070184828 A1), hereafter “Majidi,” in view of Son (US 20030104781 A1), hereafter “Son,” further in view of Bandeira et al. (US Pat 6728514), hereafter “Bandeira,” further in view of Leung et al. (US 6400697 B1), hereafter “Leung,” as

Art Unit: 2617

applied to claims 1, 7, 19, and 25, further in view of Song et al. (US 20040169612 A1), hereafter "Song."

Consider **claim 38**. Majidi, as modified by Son, Bandeira, and Leung, teaches claim 37; but does not mention wherein the at least one base station is a dual-band base station.

Song, in analogous art, suggests the aforesaid limitation (see [0005]).

Therefore, it is obvious that a person of ordinary skill was aware that a dual-band base station, in the way taught by Song, was of common knowledge in the art at the time the invention was made, and would have included it in, or applied it to, the claimed invention, or either combined it with Majidi's teachings as modified by Son, Bandeira, and Leung, thereby providing means for the purpose of accommodating wireless communications operating according to different protocols, such as advanced mobile phone service (AMPS) and personal communication service (PCS), utilizing different frequency bands, such as 800 MHz and 2.4 GHz, as discussed by Song therein.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2617

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Amancio González, whose telephone number is (571) 270-1106. The Examiner can normally be reached on Monday-Thursday from 8:00am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dwayne Bost, can be reached at (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

Art Unit: 2617

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Nghi H. Ly/

Primary Examiner, Art Unit 2617

AG/ag

June 23, 2010